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10/694,178	10/28/2003	Janne Vaananen	0365-0580P	2740

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EXAMINER	
VU, THONG H	

ART UNIT	PAPER NUMBER
2619	

NOTIFICATION DATE	DELIVERY MODE
11/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/694,178	VAANANEN, JANNE	
	Examiner	Art Unit	
	Thong H. Vu	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4 and 6-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4,6-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Amended claims 2-4,6-8 and new claims 9-17 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 2-4,6-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. Regarding claims 9,11,13, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 2-4,6-17 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-12 of copending Application No. 10/575,706 ('706). This is a

provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

('706) 1. A method for controlling the congestion management and the scheduling of transmission link capacity in packet-switched telecommunications, in which method digital information is transmitted as constant or variable-length packets, identifier data is attached to the packets, on the basis of which the packets are divided into at least two different service level classes, on the basis of the service level class data, each packet is routed to one of the FIFO queues (3-5), which are one for each service level class, at least one service level class is such that identifier data is attached to the packets belonging to it, with the aid of which the packets are divided into at least two internal sub-groups (.e.g., drop precedence) in the service level class, the packets belonging to the same service level class form a flow, in which the transmission order of the packets is retained, the available capacity of the outgoing link or links of the system is scheduled (1) for the service-level-class-specific FIFO queues using a weighting-coefficient-based scheduling method, a priority-based [sequencing] [scheduling] method, or a combination of these methods, congestion in the service-level-class-specific FIFO queues is limited by dropping or marking (ECN, Explicit Congestion Notification [2]) packets in the queue or arriving in the queue, characterized in that the packet-specific priority value in the priority-based scheduling and/or the weighting coefficient in the weighting-coefficient-based scheduling is defined from the joint effect of a variable q and a variable vector x and that the selection of the packets within a specific service level class, to which dropping or marking will be applied in a congestion situation, are defined from the effect of the variable vector x, in which the variable q is defined from the service level class (CoS), to which the traffic represented by which the packet in question belongs, and the variable vector x is formed of the results provided by measurement (2) applied to the traffic flow representing the service level class being examined, or of variables derived from the relevant results, in which the measurement results depend on temporal variation in the data transmission speed of the traffic representing the traffic flow being examined, and on the distribution between the different sub-groups of the packets representing the traffic flow being examined.

3. The method according to claim 1 is characterized in that the SFQ (Start-time Fair Queuing [1]) method is used as the weighting-coefficient-based scheduling method.

4. The method according to claim 1 is characterized in that the WFQ (Weighted Fair Queuing [1]) method is used as the weighting-coefficient-based scheduling method.

(Application) 9. A method for scheduling link bandwidth between different packet-switched data flows comprising:
classifying digital data packets of fixed or variable length into one of at least two classes of service wherein said classes of service represent a range of service levels between "real-time" and "best-effort" and each class of service is represented by at least one parallel FIFO (first-in-first-out) queue; and
scheduling available bandwidth of transmission links between class-of-service specific FIFO queues using a bandwidth scheduling discipline that ensures instantaneous availability of unutilized portions of bandwidth from all service classes to all effort-based service classes in a specific, consistent, configurable, ratio by assigning a priority value to a packet based on a combination of the packer's class of service and the subgroup information (such as drop precedence) of the packet or at least one packet immediately preceding or following said packet.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See MPEP § 804.

Claim Rejections - 35 USC § 102

Claims 2-4,6-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Tayyar et al [Tayyar 7,194,741 B2].

5. Claim 9, Tayyar discloses A method for scheduling link bandwidth between different packet-switched data flows comprising:

classifying digital data packets of fixed or variable length into one of at least two classes of service wherein said classes of service represent a range of service levels between "real-time" and "best-effort" and each class of service is represented by at least one parallel FIFO (first-in- first-out) queue [Tayyar, a classififer14, Fig 1; FIFO, col 1 line 48; QoS levels, col 1 line 63; fixed or variable, col 21 line 20]; and

scheduling available bandwidth of transmission links between class-of-service specific

FIFO queues using a bandwidth scheduling discipline that ensures instantaneous availability of unutilized portions of bandwidth from all service classes to all effort-based service classes in a specific, consistent, configurable, ratio by assigning a priority value to a packet based on a combination of the packer's class of service and the subgroup information (such as drop precedence) of the packet or at least one packet immediately preceding or following said packet [Tayyar, WFQ and SFQ, col 4 lines 40-55; available bandwidth, col 3 lines 45-60; priority queue, col 13 line 1; all of the arriving packet, col 22 lines 26-45; combined in a single integrated scheduler/dispatcher, col 22 lines 55].

6. Claim 10, Tayyar discloses said bandwidth scheduling discipline comprising at least one of a weight-based scheduling discipline, a priority-based scheduling discipline, or a combination of weight and priority-based scheduling disciplines [Tayyar, priority queue, col 13 line 1].

7. Claim 2, Tayyar discloses selecting a weight-based or a priority-based scheduling discipline is based on the subgroup whereto the packet in question belongs and/or on how inbound packets of the same class of service received at the scheduler input port preceding or following the packet in question are distributed between the subgroups [Tayyar, priority queue, col 13 line 1].

8. Claim 3, Tayyar discloses said weight-based scheduling discipline comprising an SFQ (Start-time Fair Queuing) discipline [Tayyar, SFQ, col 4 lines 40-55].

9. Claim 4, Tayyar discloses said weight-based scheduling discipline comprising a WFQ (Weighted Fair Queuing discipline [Tayyar, WFQ, col 4 lines 40-55].

10. Claim 11 Tayyar discloses An apparatus for scheduling link bandwidth between different packet-switched data flows comprising:

a device for classifying digital data packets of fixed or variable length into one of at least two classes of service wherein said classes of service represent a range of service levels between "real-time" and "best-effort" and each class of service is represented by at least one parallel FIFO (first-in-first-out) queue [Tayyar, a classififer14, Fig 1; FIFO, col 1 line 48; QoS levels, col 1 line 63; fixed or variable, col 21 line 20]; and

a device for scheduling available bandwidth of transmission links between class-of-service specific FIFO queues using a bandwidth scheduling discipline that ensures instantaneous availability oft unutilized portions of bandwidth from all service classes to all effort-based service classes in a specific, consistent, configurable, ratio by assigning a priority value to a packet based on a combination of the packer's class of service and the subgroup information (such as drop precedence) of the packet and at least one packet immediately preceding or following said packet [Tayyar, WFQ and SFQ, col 4 lines 40-55; available bandwidth, col 3 lines 45-60; priority queue, col 13 line 1; all of the arriving packet, col 22 lines 26-45; combined in a single integrated scheduler/ dispatcher, col 22 lines 55].

11. Claim 12, Tayyar discloses said bandwidth scheduling discipline comprising at least one of a weight-based scheduling discipline, a priority-based scheduling discipline, or a combination of weight and priority-based scheduling disciplines [Tayyar, priority queue, col 13 line 1].

12. Claim 6, Tayyar discloses a device for decision for choosing either a weight-based or a priority-based scheduling discipline based on the subgroup whereto the packet in question belongs and/or how the-inbound packets of the same class of service received at the scheduler input port preceding or following the packet in question are distributed between the subgroups [Tayyar, priority queue, col 13 line 1].

13. Claim 7, Tayyar discloses further comprising a device for carrying out a weight-based scheduling discipline using an SFQ (Start-time Fair Queuing) discipline [Tayyar, SFQ, col 4 lines 40-55].

14. Claim 8, Tayyar discloses further comprising a device for carrying out a weight-based scheduling discipline using a WFQ (Weighted Fair Queuing) discipline [Tayyar, WFQ, col 4 lines 40-55].

15. Claim 13 Tayyar discloses A computer readable medium having embodied thereon a program for scheduling link bandwidth between different packet-switched data flows which, when executed by a computer, performs the steps of:

classifying digital data packets of fixed or variable length into one of at least two classes of service wherein said classes of service represent a range of service levels between "real-time" and "best-effort" and each class of service is represented by at least one parallel FIFO (first-in- first-out) queue [Tayyar, a classififer14, Fig 1; FIFO, col 1 line 48; QoS levels, col 1 line 63; fixed or variable, col 21 line 20]; and

scheduling available bandwidth of transmission links between class-of-service specific FIFO queues using a bandwidth schedule method that ensures instantaneous

availability of unutilized portions of bandwidth from all service classes to all effort-based service classes in a specific, consistent, configurable, ratio by assigning a priority value to a packet based on a combination of the packer's class of service and the subgroup information (such as drop precedence) of the packet and at least one packet immediately preceding or following said packet [Tayyar, WFQ and SFQ, col 4 lines 40-55; available bandwidth, col 3 lines 45-60; priority queue, col 13 line 1; all of the arriving packet, col 22 lines 26-45; combined in a single integrated scheduler/dispatcher, col 22 lines 55].

16. Claim 14, Tayyar discloses said bandwidth scheduling discipline comprising at least one of a weight-based scheduling discipline, a priority-based scheduling discipline, or a combination of weight and priority-based scheduling disciplines [Tayyar, priority queue, col 13 line 1].

17. Claim 15, Tayyar discloses further comprising selecting a weight-based or a priority- based scheduling discipline based on the subgroup whereto the packet in question belongs or on how inbound packets of the same class of service received at the scheduler input port preceding or following the packet in question are distributed between the subgroups [Tayyar, priority queue, col 13 line 1].

18. Claim 16, Tayyar discloses said weight-based scheduling discipline comprising a SFQ (Start-time Fair Queuing) discipline [Tayyar, SFQ, col 4 lines 40-55].

19. Claim 17, Tayyar discloses said weight-based scheduling discipline comprising a WFQ (Weighted Fair Queuing) discipline [Tayyar, WFQ, col 4 lines 40-55].

Claim Rejections - 35 USC § 102

Claims 2-4,6-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Afek et al [Afek 5,956,340].

20. Claim 9, Afek discloses A method for scheduling link bandwidth between different packet-switched data flows comprising:

classifying digital data packets of fixed or variable length into one of at least two classes of service wherein said classes of service represent a range of service levels between "real-time" and "best-effort" and each class of service is represented by at least one parallel FIFO (first-in- first-out) queue [Afek, fixed size, col 3 line 15, variable size, col 4 line 3, FIFO, col 11 line 1]; and

scheduling available bandwidth of transmission links between class-of-service specific FIFO queues using a bandwidth scheduling discipline that ensures instantaneous availability of unutilized portions of bandwidth from all service classes to all effort-based service classes in a specific, consistent, configurable, ratio by assigning a priority value to a packet based on a combination of the packer's class of service and the subgroup information (such as drop precedence) of the packet or at least one packet immediately preceding or following said packet [Afek, WFQ, col 10 line 28; SFQ, col 8 line 36; priority queue, col 23 line 64; combines the spatial efficiency of the dynamic approach, col 1 lines 35-40].

21. Claim 10, Afek discloses said bandwidth scheduling discipline comprising at least one of a weight-based scheduling discipline, a priority-based scheduling discipline, or a

combination of weight and priority-based scheduling disciplines [Afek, priority queue, col 23 line 64].

22. Claim 2, Afek discloses selecting a weight-based or a priority-based scheduling discipline is based on the subgroup whereto the packet in question belongs and/or on how t4ae-inbound packets of the same class of service received at the scheduler input port preceding or following the packet in question are distributed between the subgroups [Afek, priority queue, col 23 line 64].

23. Claim 3, Afek discloses said weight-based scheduling discipline comprising an SFQ (Start-time Fair Queuing) discipline [Afek, SFQ, col 8 line 36].

24. Claim 4, Afek discloses said weight-based scheduling discipline comprising a WFQ (Weighted Fair Queuing discipline [Afek, WFQ, col 8 line 36].

25. Claims 6-8,11-17 contain the identical limitations set forth in claims 9-10, 2-4. Therefore claims 6-8,11-17 are rejected for the same rationale set forth in claims 9-10, 2-4.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Thong H. Vu* whose telephone number is 571-272-3904. The examiner can normally be reached on 6:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *Jay Patel* can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thong Vu
Primary Examiner

THONG VU
PRIMARY PATENT EXAMINER